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EXAMINER

FLORY, CHRISTOPHER A

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/611,696	Applicant(s) DRAKULIC, BUDIMIR	
	Examiner CHRISTOPHER A. FLORY	Art Unit 3762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-78 is/are pending in the application.
- 4a) Of the above claim(s) 41-59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 and 60-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/20/07; 06/29/07; 07/31/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-40 and 60-78 have been considered but are moot in view of the new ground(s) of rejection.
2. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).
3. In response to applicant's argument based upon the age of the references, contentions that the reference patents are old are not impressive absent a showing that the art tried and failed to solve the same problem notwithstanding its presumed knowledge of the references. See *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977).
4. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

5. In response to Applicant's argument that Blancke includes additional structure not required by Applicant's invention (i.e. the floating ground), it must be noted that Blancke still discloses the invention as claimed. The fact that it discloses additional structure not claimed is irrelevant. It is additionally noted that the embodiment shown in Figure 6 of the instant application is identical in the pre-amp structure to the device shown in Blancke such that Blancke clearly reads on the claims as rejected.

6. It is noted that no real circuit is 100% efficient, and therefore it is contemplated that it is not possible for a circuit to pass a signal from an electrode through an amplifier and particularly through a low-pass filter without losing any signal strength or without changing characteristics of the signal, for it is the identical function of an amplifier to increase, decrease, or otherwise modulate the strength of the signal and is inherently accompanied by a phase shift of the signal, however slight. A filter by definition attenuates the signal and therein changes the characteristics of said signal, even when the intended function is to remove noise from the signal, since the noise is nonetheless part of the signal received from the electrodes. Therefore, any amplifier circuit, no matter how ideal, cannot provide 100% fidelity without breaking the natural laws of thermodynamics.

7. It is further noted that the only support provided in the Specification for this intended function of providing a 100% fidelity signal (i.e. a signal passed without losing signal strength or changing characteristics) is that the amplifier have a high input impedance approaching infinity and a low output impedance approaching zero. These

characteristics are considered to be common, academic properties of any basic operational amplifier, which as such can inherently be capable of the desired function.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 4, 5, 16, 17 and 20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 4, line 3 and claim 5, line 5 each reads "the patient's skin is adapted to provide...", which is a clear impermissible recitation of the human body. "The combination of the patient's skin and each...electrode" (claim 16, line 3; claim 17, line 3; claim 20, line 3) is again a clear recitation of the human body.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 6-12, 15, 16, 33-40, 60-66, 72, 73 and 75-77 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The Application purports that the claimed

invention can pass an electrical signal from electrodes, through an amplifier without loss in signal strength and without any change in the characteristics of the signals from the electrode. It is noted that this is not possible in real rather than ideal systems without breaking the laws of thermodynamics. The only support provided in the Specification for this intended function of providing a 100% fidelity signal is that the amplifier has a high input impedance approaching infinity and a low output impedance approaching zero. These characteristics are considered to be common, academic properties of any basic operational amplifier, which as such can inherently be capable of the desired functional language of the instant invention (i.e. passing a signal without losing signal strength or changing characteristics).

11. Claims 61, 62 and 64-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Neither the specification nor the figures support the limitation that the resistor be connected in series with the capacitor, as each figure clearly shows connection in parallel.

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the Examiner regards as his invention.

13. Claims 1–40 and 60-78 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

The preamble of each of claims 1-40 and 60-78 begins merely with "Apparatus."
It is again suggested to use --**A** device-- or --**An** apparatus--.

Further, claim 4 still reads "shaped to be attached," where it is recommended to change to "adapted to..." language.

Claim 13 as amended begins "Apparatus In combination for providing..." since "In combination" was not properly deleted.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1, 2, 6–15, 18, 19, 21, 22, 24, 25, 27, 30–34, 38–40, 62, 63, 65-74 and 78 are rejected under 35 U.S.C. 102(b) as anticipated by Traub et al., (U.S. Patent 5,427,111, hereinafter Traub'111), or, in the alternative, under 35 U.S.C. 103(a) as obvious over Traub'111 in view of Gober'398.

Regarding claims 1 and 6, Traub'111 disclose an electrode constructed to be attached to the patient's skin at one of the selective positions to provide signals indicative of the parameters on the patient's body at the one of the selective positions (Fig. 3; element 25; or Fig. 4, element 45), an amplifier having an input terminal with an impedance approaching infinity (column 10, lines 6–8) and providing at an output terminal signals corresponding to the signals from the electrode (Figs. 3–4), and an

output stage connected to the amplifier (Figs. 3–4). Traub'111 do not disclose an output stage to pass signals at frequencies below a particular value. However, Gober'398 discloses an output stage to pass signals at frequencies below a particular value (column 3, lines 31–32 and 30–40) to improve and enhance signal processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Traub'111 to include an output stage to pass signals at frequencies below a particular value, as taught by Gober to provide an optimally performing device for signal processing.

With respect to claims 2, Traub'111 disclose a second electrode is constructed to be attached to the patient's skin at a position displaced from the first electrode (26 or 46) and wherein a second amplifier corresponding to the first amplifier is connected to the second electrode (Figs. 3–4) and wherein a common mode rejection is provided to the signals from the electrodes (Figs. 3–4).

With respect to claims 1, 2, 13, 21, 25, 38 and 40, Traub'111 disclose a first electrode constructed to be attached to a patient's skin at a first one of the selective positions to provide signals representing the patient's parameters at these positions, a second electrode constructed to be attached to the patient's skin at a second one of the selective positions different from the first position to provide reference signals (Figs. 3–4), a pair of amplifiers respectively connected to the first and second electrodes (Figs. 3–4) and having properties of providing a high input impedance approaching infinity (column 10, lines 6–8) and having a low output impedance (column 4, lines 24–25); output signals representing the difference between the signals on electrodes and

without changes in the characteristics of the difference of the signals between electrodes (column 4, lines 18 and 22), the amplifiers being differentially connected to each other (Figs. 3–4). Traub'111 is considered to additionally clearly disclose two low pass filters (e.g. Fig. 3, RC combinations 28/30 and 29/31) connected to electrodes 23 and 26. Alternatively, in the same field of endeavor, Gober'398 discloses a low pass filter connected to the amplifiers and for passing signals at relatively low frequencies (Fig. 2, element 42; column 3, lines 31–32 and 30–40) to improve and enhance signal processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Traub'111 to include a low pass filter connected to the amplifiers and for passing signals at relatively low frequencies, as taught by Gober'398 to provide an optimally performing device for signal processing.

Regarding claim 14, Traub'111 disclose amplifiers are constructed to obtain the difference between the signals on the first and second electrodes and are provided without substantially identical constructions (Figs. 3–4).

With respect to claims 15 and 39, Traub'111 disclose amplifiers provide a differential relationship (Fig. 4).

Regarding claims 18 and 28, Traub'111 and Gober'398 disclose the essential features of the claimed invention as described above except for each of the amplifiers has an output impedance of approximately fifty (50) ohms to seventy-five (75) ohms. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include amplifiers has an output impedance of approximately fifty (50) ohms to

seventy-five (75) ohms, since it has been held that where the general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Further, it is well known in the art to have amplifiers with an output impedance of approximately fifty (50) ohms to seventy-five (75) ohms to provide an optimum skin-electrode impedance model that enhances signal processing.

With respect to claim 19, Traub'111 disclose amplifiers are constructed to obtain the difference between the signals on the first and second electrodes and the amplifiers provide a differential relationship (Figs. 3–4).

Regarding claim 22, Traub'111 discloses the first and second amplifiers have substantially identical characteristics (Fig. 4) and the first and second electrodes have substantially identical characteristics (45, 46).

Regarding claim 24, Traub'111 disclose each of the first and second amplifiers has a low output impedance with substantially identical characteristics (Fig. 4; column 4, lines 24–25).

With respect to claim 27, 30, and 32 Traub'111 discloses each of the amplifiers has an output impedance considerably less than the input impedance of the amplifier (column 7, lines 49–50) (claim 27); electrodes having identical characteristics (45, 46) and amplifiers having identical characteristics (49, 50) (claim 30); the amplifiers include a pair of transistors having terminals respectively connected to the first and second electrodes (Fig. 4) (claim 32).

Regarding claim 31, Traub'111 do not disclose a low pass filter is formed from a plurality of capacitors differentially connected to a pair of amplifiers. However, Gober'398 discloses a low pass filter is formed from a plurality of capacitors differentially connected to a pair of amplifiers (42') to improve and enhance signal processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Traub'111 to include a low pass filter is formed from a plurality of capacitors differentially connected to a pair of amplifiers, as taught by Gober'398 to provide an optimally performing device for signal processing

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 1-3, 6-12, 33, 35-37, 60-64, 71, 72 and 75-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blancke, (U. S. Patent 4, 243,044, hereinafter Blancke'044) in view of, Gober, (U.S. Patent 5,052,398, hereinafter Gober'398).

Blancke'044 discloses an electrode constructed to be attached to the patient's skin at an individual one of the selective positions to provide signals indicative of the parameters on the patient's body at the selective positions (Fig. 1) and an amplifier constructed to pass signals from an electrode without loss in signal strength and without any change in signal characteristics (column 5, lines 22-24) (claim 1); a circuit

connected to an amplifier (Figs. 1, 1A and 1B) (claim 36). Blancke'044 discloses the essential features of the claimed invention as described above except for a circuit that operates as a low pass filter. In the same field of endeavor, Gober'398 discloses a circuit that operates as a low pass filter (Fig. 2, element 42) to improve and enhance signal processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Blancke'044 to include a circuit operates as a low pass filter, as taught by Gober'398 to provide an optimally performing device for signal processing.

Regarding claims 71, 72 and 75-77, Blancke'044 clearly shows the true ground. As previously noted, the additional disclosure of a floating ground is irrelevant.

18. Claims 3-5, 16, 17, 20, 23, 26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Traub'111 and Gober'398 as applied to claims 1, 2, 13, 21, and 25 above, and further in view of Callahan et al., U.S. Patent 4,424,816.

Traub'111 disclose amplifiers have a substantially identical construction (Fig. 4). Further, Traub'111 and Gober disclose the essential features of the claimed invention as described above except for an input impedance of an amplifier is approximately 10^{15} ohms. However, Callahan et al. disclose an input impedance of an amplifier is approximately 10^{15} ohms (column 5, lines 39-41) to effectively provide immunity to noise signals and render more accurate parameter data sensing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made

to have modified the modified inventions of Traub'111 and Gober, as taught by Callahan et al. to render optimum and effective parameter sensing.

Regarding claim 20, Traub'111 and Gober disclose the essential features of the claimed invention as described herein and above except for each of the amplifiers has an output impedance of approximately fifty (50) ohms to seventy-five (75) ohms. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include amplifiers has an output impedance of approximately fifty (50) ohms to seventy-five (75) ohms, since it has been held that where the general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Further, it is well known in the art to have amplifiers with an output impedance of approximately fifty (50) ohms to seventy-five (75) ohms to provide an optimum skin-electrode impedance model that enhances signal processing.

19. Claims 6–12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hannula, U.S. Patent Application Publication 2002/0021813, and in view of Traub'111, U.S. Patent 5,427,111.

Regarding claims 6, Hannula discloses an electrode constructed to be applied to one of the selective positions of a patient's skin to provide a signal representative of a patient's parameters at this selective position (paragraph [0031], lines 2–4), an amplifier connected to an electrode to amplify the signal at the electrode without producing noise resulting from movements of a patient (Fig. 6; paragraph [0031], lines 8–15; paragraph [0028], lines 1–4), and a low pass filter connected to the amplifier to provide an output in

which any remaining noise is eliminated and signals in a particular frequency range are passed by the low pass filter (paragraph [0031], lines 13–18). Hannula does not disclose an amplifier having characteristics of providing a high input impedance and a low output impedance. However, Traub'111 disclose an amplifier having characteristics of providing a high input impedance and a low output impedance (column 4, lines 24–25) to provide optimum parameter sensing capabilities of a device. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Hannula to include an amplifier having characteristics of providing a high input impedance and a low output impedance, as taught by Traub'111 to render optimum and effective device parameter sensing.

Hannula discloses a second electrode connected to a patient's skin provides a reference (paragraph [0031], lines 2–4) and an amplifier constitutes a differential amplifier for eliminating noise from the signals provided by an electrode (claim 7) (Fig. 6; paragraph [0031], lines 2–4 and 8–18); an amplifier includes a differential stage for eliminating noise from the signals provided by the electrode (claim 8) (Figs. 4A and 6; paragraph [0031], lines 2–4 and 8–18; paragraph [0028], lines 1–8); an output of an amplifier is introduced to the low pass filter (claim 10) (Fig. 6).

Hannula does not disclose an amplifier provides an input impedance approaching infinity (claim 9). However, Traub'111 disclose an input impedance approaching infinity (column 10, lines 6–8) to effectively provide immunity to noise signals and render more accurate parameter data sensing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to

have modified the invention of Hannula to include an input impedance approaching infinity, as taught by Traub'111 to optimize effective data sensing measurements and device performance.

With respect to claim 11, Hannula discloses a low pass filter limits an amplitude of an output from a low pass filter to facilitate the operation of an amplifier in processing a signal (Fig. 6), but does not disclose an amplifier has a low output impedance. However, Traub'111 disclose an amplifier has a low output impedance (column 4, lines 24–25) to provide optimum parameter sensing capabilities of a device. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Hannula to include an amplifier has a low output impedance, as taught by Traub'111 to render optimum and effective parameter sensing.

Regarding claim 12, Hannula discloses an output from an amplifier is introduced to a low pass filter (Fig. 6) and a low pass filter limits an amplitude of an output from a low pass filter to facilitate the operation of an amplifier in processing the signals (Figs. 2 and 6; paragraph [0025]). Hannula does not disclose an amplifier provides an input impedance approaching infinity and an amplifier has a low output impedance. However, Traub'111 disclose an input impedance approaching infinity (column 10, lines 6–8) and an amplifier has a low output impedance (column 4, lines 24–25) to effectively provide immunity to noise signals and render more accurate parameter data sensing and to provide optimum parameter sensing capabilities of a device. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Hannula to include an input impedance approaching

infinity and an amplifier has a low output impedance, as taught by Traub'111 to optimize effective data sensing measurements and device performance and to render optimum and effective parameter sensing.

20. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Traub'111 and Gober'398 as applied to claim 26 above, and further in view of, Yonce, U.S. Patent Application Publication 2001/0021813.

21. Traub'111 and Gober disclose the essential features of the claimed invention as described above except for a second low pass filter differentially connected to the output terminals of the amplifiers for passing low frequency signals representing the difference between signals on output terminals of the amplifiers. However, Yonce discloses a second low pass filter differentially connected to the output terminals of the amplifiers for passing low frequency signals representing the difference between signals on output terminals of the amplifiers (Fig. 6B) to improve and enhance signal processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the modified inventions of Traub'111 and Gober to include a second low pass filter differentially connected to the output terminals of the amplifiers for passing low frequency signals representing the difference between signals on output terminals of the amplifiers, as taught by Yonce to provide an optimally performing device for signal processing.

22. Claims 33–34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hannula and Traub'111 as applied to claim 6 above, and further in view of, Yonce, U.S. Patent Application Publication 2001/0021813.

23. With respect to claim 33, Hannula discloses an amplifier has an input and an output and a low pass filter is a first low pass filter and is connected to the output of an amplifier to provide an output in which noise is eliminated and signals in a particular frequency range are passed by a low pass filter (Fig. 6) and a low pass filter is connected between an electrode and an input of an amplifier to eliminate noise and to pass signals in a particular frequency range (Fig. 6). Hannula and Traub'111 nowhere disclose an explicit representation of a first low pass filter and a second low pass filter. However, Yonce in Figure 6B elements 650 and 675 teaches a first low pass filter and a second low pass filter to provide effective immunity to noise signals for a desired output signal sensing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the modified inventions of Hannula and Traub'111 to include a first low pass filter and a second low pass filter, as taught by Yonce to generate clear and accurate output signal sensing.

24. Regarding claim 34, Hannula discloses a first low pass filter operates on a differential basis (Fig. 6). Hannula and Traub'111 do not disclose a first low pass filter and a second low pass filter operates on a differential basis. However, Yonce discloses a first low pass filter and a second low pass filter operates on a differential basis (Fig. 5A) to enhance signal-to-noise characteristics of a desired output signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was

made to have modified the modified inventions of Hannula and Traub'111 to include a first low pass filter and a second low pass filter operates on a differential basis, as taught by Yonce to render optimum and effective signal data.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher A. Flory whose telephone number is (571) 272-6820. The examiner can normally be reached on M - F 8:30 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on (571) 272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Christopher A. Flory/

8 November 2008

/George Manuel/
Primary Examiner